

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Michael F. Roberts et al. Art Unit : 1744
Serial No. : 10/692,916 Examiner : Mark Spisich
Filed : October 24, 2003 Conf. No. : 9057
Title : GUM MASSAGING ORAL BRUSH

Mail Stop Appeal Brief - Patents

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDED BRIEF ON APPEAL

Appellants are appealing the final rejection of claims 55 and 57-60 in the final office action dated December 26, 2007. Appellants request that the rejections be reversed.

(1) Real Party in Interest

The real party of interest is Gillette Canada Company. Gillette Canada Company is owned by The Procter & Gamble Company.

(2) Related Appeals and Interferences

A Notice of Appeal was filed March 19, 2008 in Patent Application Serial No. 10/991,911.

Notices of Appeal were filed March 6, 2008 in Patent Application Serial Nos. 10/036,022 and 11/248,087.

(3) Status of Claims

Claims 55 and 57-60 are on appeal. Claims 1-54, 56, 61-62 have been canceled. Claims 55 and 57-60 are pending; claim 55 being the only claim in independent form. Claims 55, 57 and 58 have been rejected as being obvious over Lion Corporation, Japanese Unexamined Utility Model Application No. 1-72128 ("J-128"), in view of Dolinsky, U.S. Patent No. 4,288,883 ("Dolinsky") and Chen., U.S. Patent No. 5,334,646 ("Chen"); and claims 59 and 60 stand rejected as being obvious over J-128, in view of Dolinsky and Chen, as applied to claim 55, and further in view of Muhler et al., U.S. Patent No. 3,613,143 ("Muhler").

(4) Status of Amendments

All amendments have been entered.

(5) Summary of Claimed Subject Matter

Claims 55 and 57-60 are pending; claim 55 being the only claim in independent form.

Claim 55 features an oral brush (**FIG. 1,10**) that includes an elongated handle (**FIG. 1,12**), a head portion (**FIG. 1,14**), sized for insertion into the human mouth (**page 2, line 32 - page 3, line 3**), extending from an end of the handle (**FIG. 1,12**) and a brush portion (**FIG. 1,16**). The brush portion (**FIG. 1,16**) includes:

(a) one or more elastomeric element(s) (**FIG. 1,20 or, alternatively, FIG. 6,20**) extending from the head portion (**FIG. 1,14**) to a radiused terminal end (e.g., **FIG. 7**), to contact one or more teeth (**page 3, line 3**), the elastomeric element(s) (**FIG. 1,20 or, alternatively, FIG. 6,20**) including a thermoplastic elastomer having a Shore A hardness of 30 or greater (**page 8, lines 1-2**), wherein the thermoplastic elastomer comprises an oil plasticized styrene-ethylene-butylene-styrene block copolymer (**page 11, lines 14 and 15; page 6, last paragraph**); and

(b) a plurality of bristles (**FIG. 1,18**) extending from the head portion (**FIG. 1,14**) that include a non-elastomeric material (**page 5, pages 18 and 19, and page 8, lines 9-27**), wherein said elastomeric element(s) extend(s) upwardly from said head portion in substantially the same direction as at least some of the non-elastomeric bristles (e.g., **FIG. 1**).

(6) Grounds of Rejection to be Reviewed on Appeal

Appellants request reversal of the rejection of claims 55, 57 and 58 as obvious over J-128, in view of Dolinsky and Chen.

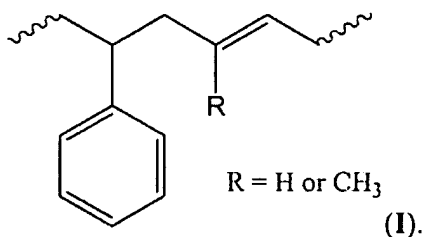
Appellants also request reversal of the rejection of claims 59 and 60 as obvious over J-128, in view of Dolinsky and Chen, as applied to claim 55, and further in view of Muhler.

(7) Argument

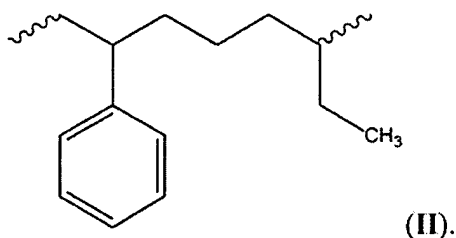
A. The Rejection of Claims 55, 57 and 58 as Obvious over J-128, in View of Dolinsky and Chen Should be Reversed

Claim 55 features an oral brush that includes, in pertinent part, one or more elastomeric element(s), the elastomeric element(s) including a thermoplastic elastomer *having a Shore A hardness of 30 or greater*, the thermoplastic elastomer including *an oil plasticized styrene-ethylene-butylene-styrene block copolymer*. Appellants have found that the addition of an oil to the elastomer desirably lowers the coefficient of friction of the element or elements (especially when wet), improving mouth feel, safety, comfort, and even potentially improving the clinical benefit of the brush.

J-128 discloses an oral cleaning implement employing filaments composed of an engineering elastomer. Styrene-butadiene-styrene (R = H) and styrene-isoprene-styrene (R = CH₃) copolymers are disclosed, which may be represented by Structure I (shown below)



In contrast, claim 55 requires a styrene-ethylene-butylene-styrene block copolymer, which may be represented by Structure II (shown below)



In addition to not disclosing or suggesting the required styrene-ethylene-butylene-styrene block copolymer, J-128 does not disclose or suggest that the block copolymer be oil plasticized, as required by claim 55, and is completely silent as to the Shore A hardness of the thermoplastic elastomer, which claim 55 requires to be greater than 30.

Dolinsky discloses a combined toothbrush and gum massaging device that includes a plurality of relatively stiff bristles and one or more rows of massaging elements. Dolinsky does not disclose or suggest a *styrene-ethylene-butylene-styrene block copolymer*, much less an *oil plasticized styrene-ethylene-butylene-styrene*, as required by claim 55. In addition Dolinsky is silent as to the Shore A hardness of the thermoplastic elastomer, which claim 55 requires to be greater than 30.

Chen describes *gelatinous* compositions and articles that are formed from an intimate melt blend of poly(styrene-ethylene-butylene-styrene) triblock copolymer and *high* levels of a plasticizing oil (Abstract). By a high level of oil, Chen means that for every 100 parts by weight elastomer, there are from about 300 to about 1600 parts by weight plasticizing oil, or more preferably from about 350 to about 1600 parts by weight (col. 2, lines 20-45).

Chen does not describe the hardness of his gels in terms of Shore A hardness. As discussed in U.S. Patent 5,749,111, this is because Chen's gels would generally be so soft as to be off the Shore A scale. The '111 reference, which refers to Chen as disclosing "the most preferred gels to be used in the cushions of this invention" ('111, col. 20, lines 3-6), states that:

"Any gelatinous elastomer or gelatinous viscoelastomer with a hardness on the Shore A scale of less than 15 may be considered a gel for the purposes of this invention, though a hardness of 3 or less on the Shore A scale is preferred, and a hardness which is *off the Shore A scale and is characterized by a gram Bloom of less than about 800* is much preferred." ('111, col. 19, lines 45-51, emphasis added.)

The gels described by Chen are said to have a gel rigidity of 20 to 700 gram Bloom (Chen, col. 4, lines 26-29), and thus would be well off the Shore A scale. Thus, if anything, Chen would have suggested to the artisan to modify the block copolymers disclosed in J-128 to be extremely soft and gelatinous, having a hardness much lower than Appellants' lower limit of 30 Shore A.

Appellants respectfully submit that the Examiner has not established a *prima facie* case of obviousness. None of the prior art references teach or suggest one or more elastomeric element(s) including a thermoplastic elastomer having a Shore A hardness of 30 or greater, the thermoplastic elastomer including an oil plasticized styrene-ethylene-butylene-styrene block copolymer, nor has the Examiner established that modifying the art of record in this manner would have been within the understanding of one ordinary skill in the art.

Moreover, there is no teaching, suggestion or motivation that would have led one of ordinary skill in the art to combine the references in the manner suggested by the Examiner. The Examiner apparently believes that the disclosure in Chen that his oil-plasticized materials can be used in dental floss (page 3 of the Office Action) would have motivated someone of skill in the art to use an oil plasticized styrene-ethylene-butylene-styrene block copolymer in an elastomeric element of an oral brush. Appellants believe that this is an error for at least the following reasons.

First, just because the materials of Chen can be used in a dental floss does not mean they are suitable for use in an elastomeric element in an oral brush. For example, Nylon 6,6 is commonly used as a dental floss material, but this material is generally not suitable for use in bristles in an oral brush because of its poor mechanical properties, especially when wet.

Second, a person of ordinary skill in the art would not expect Chen's soft *gelatinous* materials to have suitable mechanical properties for use in an elastomeric element of an oral brush. For example, U.S. Patent No. 5,749,111, referred to above, notes that Chen's gels "are very pliable to enable column buckling of even relatively thick columns." ('111, col. 20, lines 17-19.) Such buckling of Appellants' elastomeric elements during use would be undesirable. As discussed in Appellants' specification, e.g., at page 6, last paragraph, suitable thermoplastic elastomers for use in Appellants' elastomeric elements "have sufficient stiffness and hardness for effective gum massage and to resist tearing and/or excessive wear during use."

Thus, it would not have been obvious to the artisan that the teachings of Chen could be combined with those of J-128 and Dolinsky, and even if such a combination had been made it would not have resulted in Appellants' claimed invention. Accordingly, Appellants respectfully request that this rejection be reversed.

**B. The Rejection of Claims 59 and 60 as Being Obvious Over J-128, in View of
Dolinsky and Chen, and Further in View of Muhler Should be Reversed**

Regarding the rejection of claims 59 and 60 as being obvious over J-128, in view of Dolinsky and Chen, as applied to claim 55, and further in view of Muhler, Appellants respectfully submit that, as the noted deficiencies of the primary references are not resolved by any teaching of Muhler or by reference to general knowledge of one of merely ordinary skill, claims 59 and 60 are allowable for at least the reason that they depend from allowable base claim 55.

CONCLUSION

The 35 U.S.C. 103(a) rejection of claims 55, 57 and 58 based on J-128 in view of Dolinsky and Chen should be reversed, as should the 35 U.S.C. 103(a) rejection of claims 59 and 60 based on these references further in view of Muhler.

A listing of the claims is attached hereto.

The \$510 brief fee was previously paid with the initial Appeal Brief submission on June 19, 2008. Please apply any other charges or credits to Deposit Account No. 06-1050, referencing Attorney Docket No. 00216-368005.

Respectfully submitted,

Date: July 7, 2008

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Appendix of Claims

55. An oral brush comprising
an elongated handle;
a head portion, sized for insertion into the human mouth, extending from an end of said handle; and
a brush portion comprising
(a) one or more elastomeric element(s) extending from said head portion to a radiused terminal end to contact one or more teeth, said elastomeric element(s) comprising a thermoplastic elastomer having a Shore A hardness of 30 or greater, wherein the thermoplastic elastomer comprises an oil plasticized styrene-ethylene-butylene-styrene block copolymer and,
(b) a plurality of bristles extending from said head portion comprising a non-elastomeric material,
wherein said elastomeric element(s) extend(s) upwardly from said head portion in substantially the same direction as at least some of the non-elastomeric bristles.

57. The oral brush of claim 55, wherein said thermoplastic elastomer is sufficiently soft so as to avoid gum irritation during gum massage.

58. The oral brush claim 55, wherein said bristles are a polyamide.

59. The oral brush of claim 55, wherein said bristles are a polymeric material including an abrasive.

60. The oral brush claim 55, wherein said bristles have a diameter of from about 5 to about 10 mils.

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Evidence Appendix

None.

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Related Proceedings Appendix

None.